



May, M. T. (2017). Better to know: the importance of early HIV diagnosis. *Lancet Public Health*, 2(1), e6-e7.  
[https://doi.org/10.1016/S2468-2667\(16\)30038-X](https://doi.org/10.1016/S2468-2667(16)30038-X)

Publisher's PDF, also known as Version of record

License (if available):  
CC BY-NC-ND

Link to published version (if available):  
[10.1016/S2468-2667\(16\)30038-X](https://doi.org/10.1016/S2468-2667(16)30038-X)

[Link to publication record in Explore Bristol Research](#)  
PDF-document

This is the final published version of the article (version of record). It first appeared online via Elsevier at <http://www.sciencedirect.com/science/article/pii/S246826671630038X>. Please refer to any applicable terms of use of the publisher.

## University of Bristol - Explore Bristol Research

### General rights

This document is made available in accordance with publisher policies. Please cite only the published version using the reference above. Full terms of use are available:  
<http://www.bristol.ac.uk/red/research-policy/pure/user-guides/ebr-terms/>

## Better to know: the importance of early HIV diagnosis



Early diagnosis is key to successful treatment of HIV. Before the advent of highly active antiretroviral therapy (HAART) in 1996, HIV infection almost always resulted in a decline in immune function leading to opportunistic infections and early death from AIDS. The situation now is very different for people living with HIV who are on HAART. One pill a day can suppress the virus and near normal life expectancy is possible.<sup>1</sup> However, this biomedical success story has many caveats. Findings of the START trial<sup>2</sup> showed that morbidity and mortality is high when treatment is delayed. In recognition of this, the UK and other international HIV treatment guidelines recommend that ART be started immediately after diagnosis.

The study by Sara Croxford and colleagues<sup>3</sup> reported in *The Lancet Public Health* documents mortality and causes of death in people diagnosed with HIV in the UK between 1997 and 2012. This study is important because it is based on national surveillance of people diagnosed with HIV who accessed care in the UK National Health Service (NHS). Previous studies in high-income countries reported mortality in the HIV positive population to be between 1.2 and 4.2 times higher than in the general population, but results were based on clinical cohorts of treated patients. Croxford and colleagues<sup>3</sup> included people from diagnosis and therefore counted deaths in people who did not start treatment and noted nearly six times higher mortality in the HIV-positive population compared with the general UK population. The investigators explored two important explanations for this high mortality: the effect of late diagnosis and the causes of death.

With regards to late diagnosis, until 2015 UK HIV treatment guidelines recommended that ART be started in HIV patients who had CD4 counts, a marker of immune function, lower than 350 cells per mm<sup>3</sup>. Therefore, late diagnosis was defined as having a CD4 count lower than 350 cells per mm<sup>3</sup> within 3 months of diagnosis. During the study by Croxford and colleagues,<sup>3</sup> 61% of women and 51% of men were diagnosed late. Mortality was 24 times that of the UK population in the first year after diagnosis, dropping to 2.8 times thereafter.<sup>3</sup> There is an urgent need to increase testing rates to reduce late diagnosis, especially in primary care settings where opportunities

might be missed to detect primary infection as a flu-like illness or to screen for HIV when other blood tests are being done.<sup>4</sup> General practitioners are advised to test for HIV if patients have an HIV indicator disease (a list of 39 disorders associated with HIV infection listed in the British HIV Association guidelines); however, barriers have been reported to implementing this guideline.<sup>5</sup> High-risk individuals, such as men who have sex with men, are recommended to test frequently. Evidence suggests that proactive recall can increase re-testing rates for HIV in both heterosexuals and men who have sex with men attending clinics for sexually transmitted disease screening.<sup>6</sup> Home testing using kits supplied via the internet might afford more opportunities for early diagnosis.<sup>7</sup> Research is needed to investigate ways of optimising linkage to care after a positive result. Among those who died in the reported study, nearly a quarter were not linked to HIV outpatient care, and a third of those who did link to care never received ART.<sup>3</sup> Linkage to care is a crucial step in the cascade of care and needs to be made as easy as possible with good communication between place of diagnosis, which is often a sexual health clinic, and HIV clinic. Retention in care can be enhanced by reminders to attend clinic, adherence counselling, and addressing mental health, psychosexual and social care needs, as well as physical care.

Second, the causes of death shed light on the problems faced by people living with HIV. Perhaps unsurprisingly the major cause of death is still AIDS. Excess of deaths classified as non-AIDS infection likely reflects the imperfection of the list of AIDS defining disorders; these bacterial infections thrive in people with immune deficiency and are directly HIV-related. Deaths due to suicide and overdose are potentially avoidable and suggest the need for improved mental health care, de-stigmatisation of HIV infection, and harm reduction programmes for those who use recreational drugs. Excess liver-related mortality in people who inject drugs (currently or historically) might be due to the recreational drugs themselves or alcohol, but in many cases is caused by co-infection with hepatitis C. Testing for hepatitis C and treatment with very effective new direct acting antivirals should be standard of care for HIV-positive individuals to ensure reduction in liver-related morbidity and mortality.

Published Online  
December 14, 2016  
[http://dx.doi.org/10.1016/S2468-2667\(16\)30038-X](http://dx.doi.org/10.1016/S2468-2667(16)30038-X)  
See [Articles](#) page e35

In the UK, HIV care after diagnosis is provided for free and is excellent as assessed by Public Health England.<sup>8</sup> Much progress has been made, with mortality in 2008–12 half that in 1998–2002,<sup>3</sup> but further improvements in testing and prevention are needed to reduce undiagnosed infection, incidence, late diagnoses, and ultimately deaths due to HIV. The public health community must also be mindful that immigrant populations, especially those from countries where HIV is endemic, experience a disproportionate burden of HIV, delayed diagnosis, and poorer access to ART throughout Europe.<sup>9</sup> Preventive measures targeting these vulnerable populations are important as a substantial proportion of HIV acquisition occurs after their arrival in Europe.<sup>10</sup> Ongoing monitoring of the public health response to national HIV epidemics using surveillance data from routinely collected laboratory and clinic data and linkage to death registries remains very important.<sup>11</sup>

**Margaret T May**

School of Social and Community Medicine, University of Bristol,  
Bristol, UK  
margaret.may@bristol.ac.uk

I declare no competing interests.

Copyright © The Author(s). Published by Elsevier Ltd. This is an Open Access article under the CC BY-NC-ND license.

- 1 May M, Gompels M, Sabin C. Life expectancy of HIV-1-positive individuals approaches normal conditional on response to antiretroviral therapy: UK Collaborative HIV Cohort Study. *J Int AIDS Soc* 2012; **15** (suppl 4): 18078.
- 2 Group ISS, Lundgren JD, Babiker AG, et al. Initiation of antiretroviral therapy in early asymptomatic HIV infection. *N Engl J Med* 2015; **373**: 795–807.
- 3 Croxford S, Kitching A, Desai S, et al. Mortality and causes of death in people diagnosed with HIV in the era of highly active antiretroviral therapy compared with the general population: an analysis of a national observational cohort. *Lancet Public Health* 2016; published online Dec 14. [http://dx.doi.org/10.1016/S2468-2667\(16\)30020-2](http://dx.doi.org/10.1016/S2468-2667(16)30020-2).
- 4 Womack J, Herieka E, Gompels M, et al. A novel strategy to reduce very late HIV diagnosis in high-prevalence areas in South-West England: serious incident audit. *J Public Health (Oxf)* 2016; published online Feb 24. DOI:10.1093/pubmed/fdw007.
- 5 Davies CF, Gompels M, May MT. Public and healthcare practitioner attitudes towards hiv testing: review of evidence from the United Kingdom (UK). *International STD Research and Reviews* 2015; **3**: 31.
- 6 Desai M, Woodhall SC, Nardone A, Burns F, Mercey D, Gilson R. Active recall to increase HIV and STI testing: a systematic review. *Sex Transm Infect* 2015; **91**: 314–23.
- 7 Witzel TC, Rodger AJ, Burns FM, Rhodes T, Weatherburn P. HIV self-testing among men who have sex with men (MSM) in the UK: a qualitative study of barriers and facilitators, intervention preferences and perceived impacts. *PLoS One* 2016; **11**: e0162713.
- 8 Delpech D, Brown AE, Croxford S, et al. Quality of HIV care in the United Kingdom: key indicators for the first 12 months from HIV diagnosis. *HIV Med* 2013; **14** (suppl 3): 19–24.
- 9 Deblonde J, Sasse A, Del Amo J, et al. Restricted access to antiretroviral treatment for undocumented migrants: a bottle neck to control the HIV epidemic in the EU/EEA. *BMC Public Health* 2015; **15**: 1228.
- 10 Fakoya I, Alvarez-del Arco D, Woode-Owusu M, et al. A systematic review of post-migration acquisition of HIV among migrants from countries with generalised HIV epidemics living in Europe: mplications for effectively managing HIV prevention programmes and policy. *BMC Public Health* 2015; **15**: 561.
- 11 Rice BD, Yin Z, Brown AE, Croxford S, et al. Monitoring of the HIV epidemic using routinely collected data: the case of the United Kingdom. *AIDS Behav* 2016; published online Nov 10. DOI:10.1007/s10461-016-1604-6.